

WHAT IS CLAIMED IS:

1. A computer system, comprising:
 - a source subsystem;
 - a target subsystem, wherein the source node and the target node are
 - communicatively coupled; and
 - a repository subsystem.
2. The computer system of claim 1, further comprising a network, wherein the source subsystem and target subsystem are communicatively coupled across the network.
3. The computer system of claim 2, further comprising:
 - a server cluster comprising:
 - the source subsystem operable to issue a write statement; and
 - the target subsystem, wherein the write statement may be replicated by the target subsystem according to a data transfer mode; and
4. The computer system of claim 3, wherein the repository subsystem is operable to queue the write statement and deliver the write statement to the target subsystem.
5. The computer system of claim 4, wherein the source subsystem further comprises
 - a source node operable to issue the write statement; and
 - a source storage device operable to store data and meta-data and changes thereto in response to the write statement.
6. The computer system of claim 5, wherein the target subsystem further comprises:
 - a target node operable to receive the write statement; and
 - a target storage device operable to store data and meta-data and changes thereto in response to the write statement.

7. The computer system of claim 6, wherein the data transfer mode is an asynchronous mode.

8. The computer system of claim 7, wherein the repository subsystem further comprises:

a repository node operable to receive and transmit the write statement; and
a repository queue operable to queue the write statement.

9. The computer system of claim 8,
wherein the source node is operable to send the write signal to the repository node;

wherein the repository node is operable to queue the write statement in the repository queue; and

wherein the target node is able to receive the write statement from the repository subsystem.

10. The computer system of claim 8,
wherein the source node is operable to send the write signal to the repository node when the source subsystem is currently unable to replicate the write statement;

wherein the repository node is operable to queue the write statement in the repository queue; and

wherein the target subsystem is able to receive the write statement from the repository subsystem when the target subsystem is able to replicate the write statement.

11. The computer system of claim 10, wherein the source node is operable to send the write statement to the repository subsystem if the source node receives a choke signal from the target subsystem.

12. The computer system of claim 10, wherein the target node is operable to send the choke signal to the source node if the target subsystem is unable to replicate the write statement.

13. The computer system of claim 10, wherein the target subsystem further comprises a target queue is associated with a choke threshold and is operable to queue the write statement if the target queue is not above the choke threshold

14. The computer system of claim 13, wherein the target node is operable to send the choke signal to the source node if the target node is unable to replicate the write statement and the target queue is above the choke threshold.

15. The computer system of claim 10, wherein the repository queue is associated with a choke threshold and is operable to queue the write statement if the repository queue is not above the choke threshold.

16. The computer system of claim 15, wherein the repository node is operable to send a choke signal to the source node if the repository queue is above the choke threshold.

17. The computer system of claim 16, wherein the source subsystem further comprises a source queue.

18. The computer system of claim 17, wherein the source node is operable to queue the write statement in the source queue if it receives a choke signal from the repository node.

19. The computer system of claim 8, further comprising a plurality of repository subsystems.

20. The computer system of claim 19, wherein each repository queues mirror each other.

21. The computer system of claim 3, wherein the data transfer mode is a synchronous
5 mode.

22. The computer system of claim 3, wherein the data transfer mode may be selectively changed between an asynchronous mode and a synchronous mode.

10 23. A method of data replication in a computer system comprising a source subsystem, a target subsystem and a repository subsystem, wherein a write statement issued by the source subsystem may be replicated in the target subsystem and queued in the repository subsystem, comprising:

delivering the write statement to the repository subsystem.

15 24. The method of claim 23, wherein the repository subsystem comprises:
a repository node operable to receive a write statement; and
a repository queue operable to queue the write statement.

20 25. The method of claim 24, wherein the step of delivering the write statement to the repository subsystem comprises:

delivering the write statement to the repository node; and
queuing the write statement in the repository queue.

26. The method of claim 25, further comprising the step of:
pulling the write statement from the repository queue when the target subsystem
is able to handle the write statement; and
replicating the write statement in the target subsystem.

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27. The method of claim 26, wherein the write statement is delivered to the repository
subsystem if the target subsystem is unable to handle the write statement.

28. The method of claim 27, wherein the target subsystem further comprises a target
node operable to receive the write statement.

29. The method of claim 28, wherein the target subsystem is unable to handle the
write statement if the target node cannot handle the write statement.

30. The method of claim 28, wherein the target subsystem further comprises a target
queue associated with a choke threshold and operable to queue the write statement if the target
queue is below the choke threshold.

31. The method of claim 30, wherein the target subsystem is unable to handle the
write statement if

the target node is unable to handle the write statement; and
the target queue is unable to queue the write statement.

32. A method for replicating data in a computer system comprising a source subsystem, and a target subsystem and a repository subsystem, wherein a write statement issued by the source subsystem may be replicated in the target subsystem, comprising:

replicating the data in synchronous mode if a selected condition does occur; and

replicating the data in asynchronous mode if the selected condition does not occur.

33. The method of claim 32, wherein the source subsystem is operable to send a choke signal if the source subsystem is unable to handle the write command

34. The method of claim 33, wherein the selected condition is the receipt of the choke signal.

35. The method of claim 33, wherein the target subsystem further comprises a target node operable to receive the write statement.

36. The method of claim 35, wherein the target subsystem is unable to handle the write statement if the target node is unable to handle the write statement.

37. The method of claim 35, wherein the target subsystem further comprises a target queue associated with a choke threshold and operable to queue the write statement if the target queue is below the choke threshold.

38. The method of claim 37, wherein the target subsystem is unable to handle the write statement if

the target node is unable to handle the write statement; and

the target queue is unable to queue the write statement.

39. The method of claim 32, wherein the step of replicating the data in synchronous mode comprises:

sending the write statement to the target subsystem; and

5 writing to a source storage if the source subsystem has received a data receipt acknowledgment from the target subsystem, wherein a period of time equal to a latency value elapses between sending the write statement to the target subsystem and writing to the source storage.

40. The method of claim 39, wherein the selected condition is that the latency value associated with a most recent synchronous transfer does not exceed a latency threshold, wherein
10 the latency threshold is a predetermined value.

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